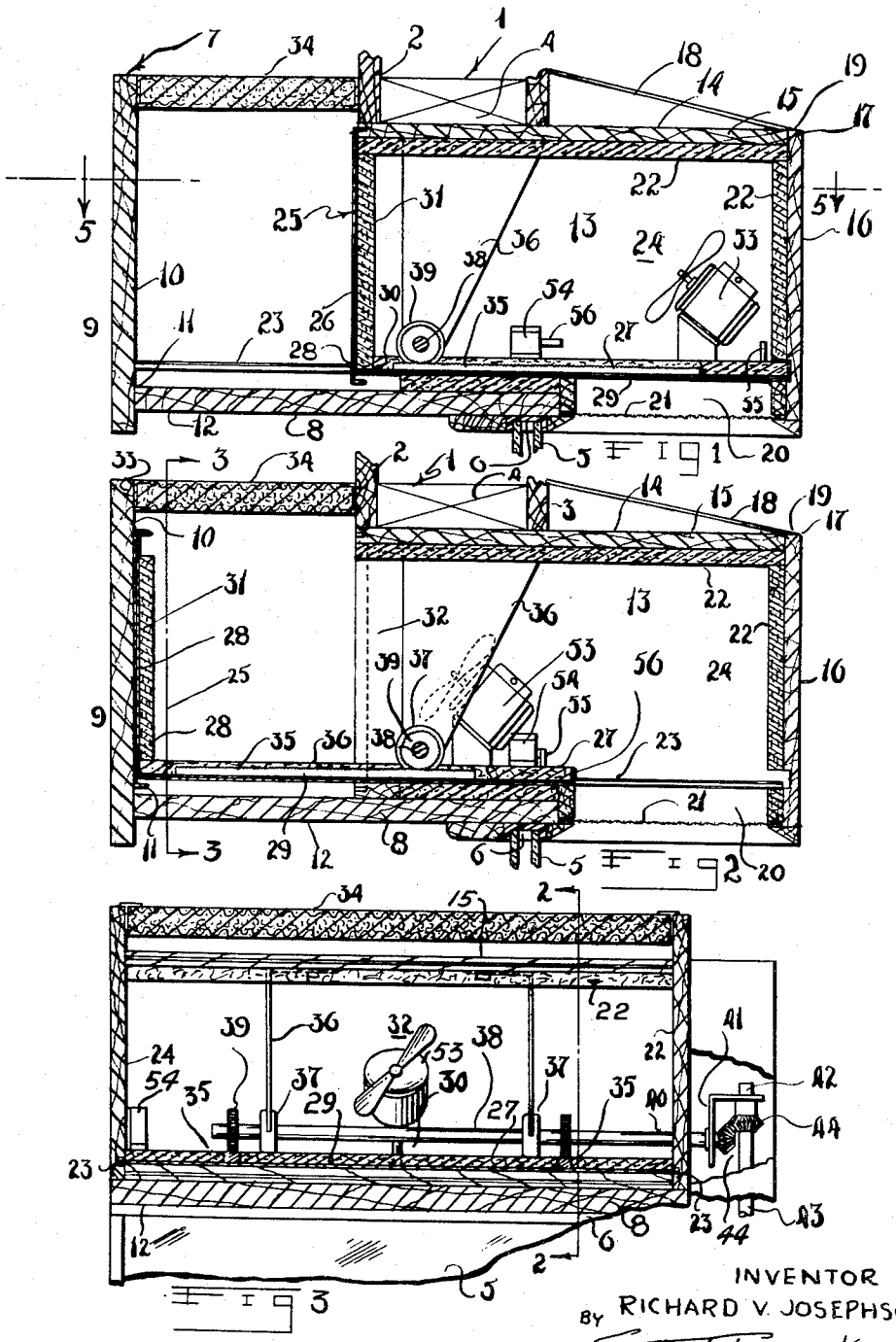
May 17, 1960 R. V. JOSEPHSON 2,936,694

VENTILATORS FOR SEALED WINDOWS AND THE LIKE

Filed April 9, 1956 2 Sheets-Sheet 1



INVENTOR
BY RICHARD V. JOSEPHSON
Fitzpatrick, Cella, Harper & Scinto
THEIR ATTYS

May 17, 1960 R. V. JOSEPHSON 2,936,694

VENTILATORS FOR SEALED WINDOWS AND THE LIKE

Filed April 9, 1956 2 Sheets-Sheet 2

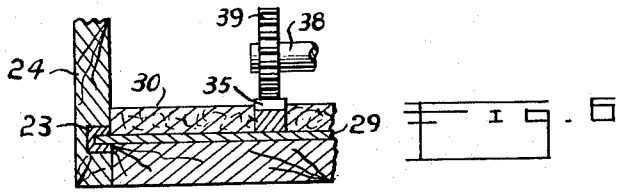


FIG. 6

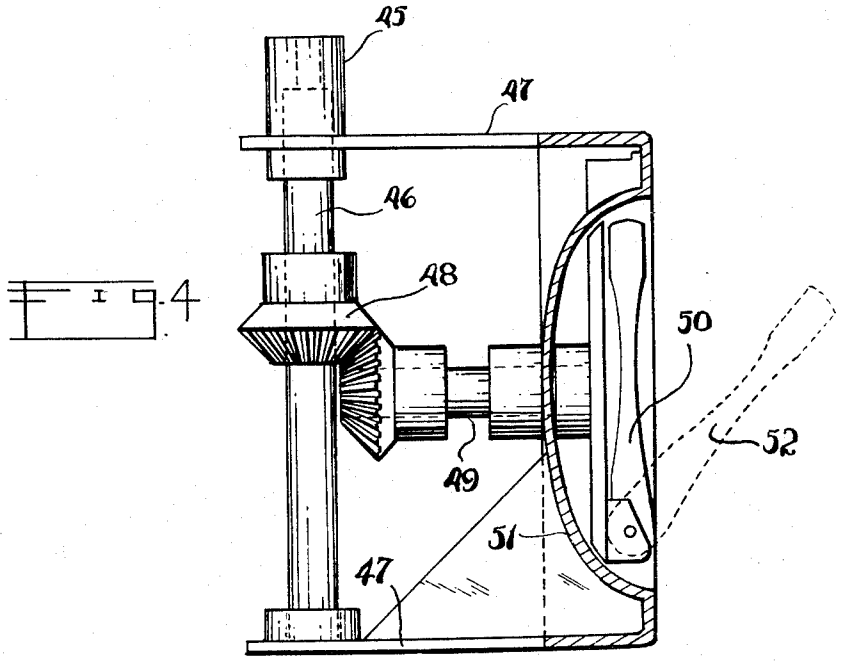


FIG. 4

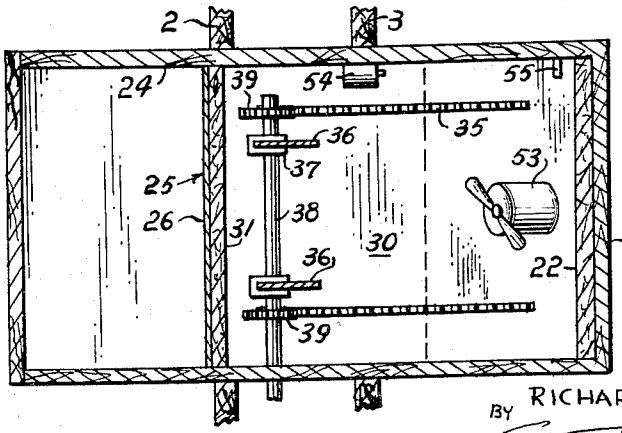


FIG. 5

INVENTOR
RICHARD V. JOSEPHSON
BY Fitzpatrick, Cella, Harper & Scinto
THEIR ATTYS

United States Patent Office 2,936,694 Patented May 17, 1960

2,936,694

VENTILATORS FOR SEALED WINDOWS AND THE LIKE

Richard V. Josephson, Winnipeg, Manitoba, Canada

Application April 9, 1956, Serial No. 577,059

4 Claims. (Cl. 98—98)

My invention relates to new and useful improvements in ventilating systems, the principal object and essence of my invention being to provide a ventilating system particularly adaptable for use with sealed window units which is situated above the windows and within conventional valence board assemblies whereby the ingress or egress of air between the room and the exterior of the building may be controlled in order to control ventilation of the room or building.

Yet another object of my invention is to provide a device of the character herewithin described in which the ventilating doors associated with the device can be actuated readily and to any degree to permit the required amount of ventilation.

A still further object of my invention is to provide a device of the character herewithin described which reduces considerably the risk of any draft occurring when the ventilation doors are open.

Yet another object of my invention is to provide a device of the character herewithin described with which may be associated an exhaust or suction fan thus enabling the occupants to adjust the ventilation as desired.

Still another object of my invention is to provide a device of the character herewithin described which, when in the closed position, completely seals the interior of the room from the exterior thereof.

A still further object of my invention is to provide a device of the character herewithin described which is adapted to be used with the conventional valance board assemblies and, when installed, is not visible to the occupants of the room at any time.

With the foregoing objects in view, and such other objects and advantages as will become apparent to those skilled in the art to which this invention relates as this specification proceeds, my invention consists essentially in the arrangement and construction of parts all as hereinafter more particularly described, reference being had to the accompanying drawings in which:

Figure 1 is a cross sectional view of a valance board assembly with my device in situ but in the closed position.

Figure 2 is a cross sectional view of a valance board assembly with my device in situ, but in the open position.

Figure 3 is a sectional view substantially along the line 3—3 of Figure 2.

Figure 4 is an enlarged partially sectioned view of the handle assembly for operating the device.

Figure 5 is a horizontal sectional view on a reduced scale, taken substantially in the plane of the line 5—5 in Figure 1.

Figure 6 is a fragmentary sectional detail on an enlarged scale, showing one of the channel tracks, closure, racks and gears used in the invention.

In the drawings like characters of reference indicate corresponding parts in the different figures.

With the advent of sealed window units particularly for use within commercial establishments, architects and contractors are under the difficulty of supplying sufficient

ventilating means in order to comply with the regulations laid down by the majority of State and Provincial authorities. It is, of course, realized that relatively expensive air-conditioning units can be installed, but it is not always desirable to incorporate such devices in many structures.

Attempts have been made to incorporate side louvers for ventilation purposes, but these are unsatisfactory particularly in areas having relatively cold winter climate as drafts can and do occur and control is difficult.

My ventilating device hereinafter to be described, overcomes these disadvantages inasmuch as it is completely out of sight when installed and furthermore it provides adequate and controlled ventilation at all times without the undesirable drafts occurring.

Proceeding therefore to describe my invention in detail, reference should first be made to Figure 1 in which a portion of the outer wall 1 is illustrated including the inner finishing wall 2, the outer wall facing 3 and window headers 4 therebetween. A double glazed window unit collectively designated 5 is illustrated in fragmentary form, the upper edge 6 being shown. A valance board assembly collectively designated 7 includes a horizontal board or member 8 extending from adjacent the upper edge 6 of the window inwardly within the room area 9. A front facing board or member 10 is secured to the inner edge 11 of the board 8 by conventional means and is the valance panel normally seen by the occupants of the room, it being understood that curtains or the like may be suspended from the underside 12 of the board 8 in the conventional manner.

It will be noticed that an area designated 13 is provided between the upper edge 6 of the window 5 and the window headers 4 and this provides communication between the interior of the room and the exterior thereof. In this connection a horizontal plate 14 is secured to the underside of the headers 4 and extends outwardly to form overhang 15 and a facing plate 16 extends downwardly from the outer edge 17 of this overhang. A conventional drip guard 18 extends between the outer wall 3 and the extremity 19 of the overhang to prevent moisture gathering upon the overhang. The valance board assembly together with area 13 forms an open sided enclosure within the room communicating with the exterior of the room.

It will be noted that vertical facing 16 extends downwardly to a point approximately at the upper edge 6 of the window and that the under portion 20 is open thus permitting direct communication via this open portion 20, through the area 13, to the interior of the room. An insect screen or grill 21 spans this opening 20 to prevent the ingress of insects into the room.

It will also be observed that the horizontal board 15 and the facing board 16 are lined with fiber glass insulation or the like 22 in order to prevent frost from gathering within the area.

Extending between the vertical facing board 10 of the valance board assembly 7 and the outer facing board 16, is a pair of rails 23 situated within the end walls 24 of the assembly, these rails being of channel formation when viewed in section. A door assembly collectively designated 25 consists of a vertical panel 26 and a horizontal panel 27 extending at right angles from the lower edge 28 of the vertical panel, said door including a base sheet 29 surmounted by insulating pad 30 which may be of fiber glass or the like and it will be seen upon reference to Figure 3 that the side edges of this panel 29 extend into and are slidably supported by the aforementioned tracks 23. It should also be observed that vertical board panel 26 is provided with insulating panel 31 in a similar manner to the aforementioned horizontal panel.

Reference to Figures 1 and 2 will show that when the door assembly is in the closed position illustrated in Figure 1, the horizontal panel 27 covers the opening 21

and the vertical panel 26 covers the opening 32 adjacent the valance board assembly thus closing off entirely the communication between the interior of the room and the exterior of the house. However, when in the open position illustrated in Figure 2, communication is established by the opening 20, into the area 13 and thence through the opening 32 and into the valance board assembly. In this connection the upper edge 33 of the valance board and the inner wall 2 is spanned by an air filter panel 34 so that air can pass upwardly through this filter and into the interior of the room.

Means to slide the door assembly along the tracks 23 are provided and takes the form of a pair of racks 35 situated upon the upper side of the horizontal panel 27 of the door assembly, said racks being spaced and parallel and extending from the front towards the rear thereof. Hanger brackets 36 depend from the panel 14 and carry bearings 37 adjacent to the lower ends thereof. Within these bearings a shaft 38 is journalled for rotation, carrying gears 39 which are adapted to engage the aforementioned racks 35. One end 40 of shaft 38 extends outwardly beyond one wall 24 of the valance board assembly and is supported by bearing brackets 41 secured to the wall of the building. This bearing bracket 41 also carries the upper end 42 of the vertical shaft 43, said upper end 42 of shaft 43 and end 40 of shaft 38 carrying meshing bevel gears 44.

The lower end (not illustrated) of shaft 43 is adapted to engage a collar 45 which in turn is secured to a shaft 46 supported within a further bearing bracket 47 secured to the wall of the building at hand level of an operator. Bevel gears 48 are secured to shaft 46 and to a stub shaft 49 extending at right angles therefrom and also carried by the aforementioned bracket 47. A folding handle assembly 50 is secured to the other end of shaft 49 and may be recessed within curved housing 51. When extended as indicated at 52, the handle 50 may rotate shaft 49 and thence through the bevel gears 48 and 44, will rotate 38 which, through the aforementioned engagement of gears 39 with the racks 35, will move the door assembly inwardly or outwardly to the degree desired.

In order to facilitate the movement of air through the assembly, when the door assembly is open, I provide an electrically operated fan assembly 53 mounted upon the horizontal panel 27 of the door assembly and adapted to be connected via electrical leads (not illustrated) to an electrical source of power (also not illustrated). This fan assembly, when operating, will cause air to move through the aperture 20 and thence through the valance assembly to the interior of the building and to facilitate the switching on and off of this fan assembly, I provide a plunger type contact switch 54 secured to one end wall 24 of the assembly and a plunger contacting strip 55 adjacent the outer edge 56 of the horizontal panel of the door assembly so that when the door is in the fully opened position as shown in Figure 2, this strip 55 depresses the plunger 56 on the switch 54 thus switching on the fan and as soon as the door is closed so that the strip 55 disengages plunger 56, the fan of course will cease to operate. This permits the door assembly to be partially opened without the fan being actuated and furthermore permits the fan to be actuated when the door assembly is in the fully opened position.

Since various modifications can be made in my invention as hereinabove described, and many apparently widely different embodiments of same made within the spirit and scope of the claims without departing from such spirit and scope, it is intended that all matter contained in the accompanying specification shall be interpreted as illustrative only and not in a limiting sense.

What I claim as my invention is:

1. In combination with an exterior building wall formed with a rectangular opening, a ventilator comprising a rectangular box-shaped housing mounted in said opening and projecting both inwardly and outwardly of said wall, said housing including a top, a bottom, a pair of sides and inner and outer ends, the bottom portion of the housing between its outer end and said building wall being open and the top portion of the housing between its inner end and the building wall also being open whereby to provide an air passage through the housing communicating the interior and exterior of the building wall, the sides of the housing being provided adjacent the bottom thereof with a pair of opposing channel tracks extending between the inner and outer ends of the housing, a sliding closure for said air passage including a bottom panel having inner and outer end edges and a pair of side edges slidable in said tracks between a closed position wherein the outer end edge of the bottom panel engages the outer end of the housing with the bottom panel covering said open bottom portion of the housing and an open position wherein the inner end edge of the bottom panel engages the inner end of the housing with the bottom panel uncovering said open bottom portion, said closure also including an upstanding panel rigid with the inner end edge of said bottom panel and closing said air passage in the plane of the opening in said building wall when the bottom panel is in its closed position, and means provided on the interior of said building wall exteriorly of said housing and operatively connected to the bottom panel of said closure for sliding the same between its open and closed positions.

2. The device as defined in claim 1 together with an electric fan mounted in said housing for propelling air through said passage when said closure is in its open position, switch means provided in the housing in circuit with said electric fan, and means operatively connecting said closure to said switch means whereby the fan may be energized in response to opening of said closure.

3. The device as defined in claim 1 together with an electric fan mounted in said housing for propelling air through said passage when said closure is in its open position, a switch provided on one of the sides of the housing and including a slidable actuating element for closing the same, and an actuating member secured to the bottom panel of said closure for sliding movement therewith, said switch being in circuit with said electric fan and said actuating member being operatively engageable with said actuating element when the closure is in its open position, whereby the fan may be automatically energized in response to opening of the closure.

4. The device as defined in claim 3 wherein said actuating member is disengaged from the actuating element of said switch at a point intermediate the closed and open positions of said closure, whereby said fan may be deenergized when the closure is partly open.

References Cited in the file of this patent

UNITED STATES PATENTS

549,405	Stevenson	Nov. 5, 1895
1,757,886	Weinheimer	May 6, 1930
1,771,543	Lindsay	July 29, 1930
2,039,826	Morton	May 5, 1936
2,228,224	Benson	Jan. 7, 1941
2,554,633	Orear	May 29, 1951
2,769,386	Silvernail	Nov. 6, 1956